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EXAMINER
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ART UNIT	PAPER NUMBER
2613	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/626,363	HOANG ET AL.
	Examiner	Art Unit	
	Shi K. Li	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *12 July 2007*.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-7,9-13 and 15-42* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-7,9-13 and 15-42* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *5/7/2007*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on 12 July 2007 has been entered.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making
> and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it
> pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode
> contemplated by the inventor of carrying out his invention.

3.   Claims 1-7, 9-13 and 15-42 are rejected under 35 U.S.C. 112, first paragraph, as failing to

comply with the written description requirement. The claim(s) contains subject matter which

was not described in the specification in such a way as to reasonably convey to one skilled in the

relevant art that the inventor(s), at the time the application was filed, had possession of the

claimed invention.

Claim 1 recites the limitation "wherein said building and maintaining the set of one or

more network topology databases includes building and maintaining the paths of possible

communication paths" in lines 10-13 of the claim. Instant specification teaches in paragraph

[0013] building and maintaining network database and establishing lightpath. However, instant

specification, as originally filed, does not teach building paths.

Claim 10 recites the limitation "builds and maintains the lightpath path of the database in lines 14-15 of the claim. Instant specification teaches in paragraph [0013] building and maintaining network database and establishing lightpath. However, instant specification, as originally filed, does not teach building paths.

Claim 16 recites the limitation "wherein the building and maintaining of the topology includes building and maintaining a set of paths to the other access nodes" in lines 8-10 of the claim. Instant specification teaches in paragraph [0013] building and maintaining network database and establishing lightpath. However, instant specification, as originally filed, does not teach building paths.

Claim 25 recites the limitation "wherein the access node builds and maintains the available paths of the database" in lines 13-14 of the claim. Instant specification teaches in paragraph [0013] building and maintaining network database and establishing lightpath. However, instant specification, as originally filed, does not teach building paths.

Claim 31 recites the limitation "wherein the building and maintaining includes building and maintaining a set of paths to other access node" in lines 4-5 of the claim. Instant specification teaches in paragraph [0013] building and maintaining network database and establishing lightpath. However, instant specification, as originally filed, does not teach building paths.

Claim 37 recites the limitation "wherein the building and maintaining includes building and maintaining a set of paths to other access nodes. Instant specification teaches in paragraph [0013] building and maintaining network database and establishing lightpath. However, instant specification, as originally filed, does not teach building paths.

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5.   Claims 9 and 29 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites the limitation "a centralized network management server ... to build and maintain the set of network topology databases" in lines 2-4 of the claim. However, Claim 9 depends on claim 1. Claim 1 recites the limitation "each of said plurality of access nodes building and maintaining a set of one or more network topology databases" in lines 4-5. It is unclear whether the centralized network management server or each of the access nodes builds and maintains the set of network topology databases.

Claim 29 recites the limitation "a centralized network management server communicatively coupled to said access node to build and maintain the database" in lines 2-3 of the claim. However, Claim 29 depends on claim 25. Claim 25 recites the limitation "wherein the access nodes builds and maintains the available paths of the database" in lines 4-5. It is unclear whether the centralized network management server or the access node builds and maintains the database.

Claim Rejections - 35 USC § 102

6.   The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7.   Claims 1-5, 10-11, 16-19, 21-22, 24-26, 28 and 30 are rejected under 35 U.S.C. 102(a) as being anticipated by Ho et al. (P. Ho et al., "A Novel Distributed Control Protocol in Dynamic Wavelength-Routed Optical Networks", IEEE Communications Magazine, November 2002).

Regarding claims 1 and 10, Ho et al. teaches dynamic wavelength routing in optical network. Ho et al. teaches in FIG. la a network with a plurality of nodes. Ho et al. teaches on page 39, right col. partially adaptive routing wherein each source node is provided with a routing table (equivalent to network topology database of instant claim), in which paths to all its destinations are stored. When a connection request arrives, the source node selects a path from all the available ones from a routing table. Ho et al. teaches on page 38, right col., last paragraph wavelength continuity constraint for each lightpath.

Regarding claims 2-3, Ho et al. teaches on page 38, right col., last paragraph lightpath.

Regarding claim 4, Ho et al. teaches on page 38, right col., last paragraph wavelength continuity constraint for each lightpath, that is, the lightpath is conversion free.

Regarding claims 5 and 11, Ho et al. teaches dynamic path selection.

Regarding claim 16, Ho et al. teaches on page 39, left col., last paragraph that routing table contains prescheduled paths for each source-destination pair where source denotes the local access node. Topology databases of two access nodes are different because they contain paths with different source nodes.

Regarding claims 17-18, Ho et al. teaches on page 38, right col., last paragraph lightpath.

Regarding claim 19, Ho et al. teaches dynamic path selection.

Regarding claim 21, Ho et al. teaches on page 39, right col., second paragraph methods for managing the link state.

Regarding claim 22, Ho et al. teaches on page 39, right col., second paragraph methods for updating the routing table.

Regarding claim 24, Ho et al. teaches in FIG. 3 that the database includes the status of each wavelength.

Regarding claim 25, Ho et al. teaches on page 39, right col., second paragraph that each node maintains link status.

Regarding claim 26, Ho et al. teaches dynamic path selection.

Regarding claim 28, Ho et al. teaches on page 39, right col., second paragraph methods for updating the routing table.

Regarding claim 30, Ho et al. teaches on page 39, right col., second paragraph that each node maintains link status.

8.   Claims 1-5, 9-11 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Blouin et al. (U.S. Patent 7,249,169 B2).

Regarding claims 1 and 10, Blouin et al. discloses in FIG. 2 a WDM network comprising a plurality of edge nodes. Blouin et al. teaches in col. 9, lines 1-30 that each edge node has a routing table. Blouin et al. teaches in col. 10, line 50-62 that upon receiving a request for connection, the edge node selects a route from the routing table. Blouin et al. teaches in col. 8, lines 62-67 that a route is a sequence of the traversed edge nodes. That is, the route of Blouin et al. is equivalent to path of instant claim.

Regarding claims 2-3, Blouin et al. teaches in col. 7, lines 5-7 light-path.

Regarding claim 4, Blouin et al. teaches in col. 7, lines 7-9 wavelength continuity property.

Regarding claims 5 and 11, Blouin et al. teaches in FIG. 5 and FIG. 6 establishing connection in real time.

Regarding claims 9 and 15, Blouin et al. teaches in FIG. 2 network controller 270.

9.   Claim 25-26, 28-34, 36-40 and 42 are rejected under 35 U.S.C. 102(e) as being anticipated by Zhang et al. (U.S. Patent 7,020,394 B2).

Regarding claims 25 and 31-33, Zhang et al. discloses in FIG. 1 a WDM network. Zhang et al. teaches in FIG. 9 that the network can be represented by a graph G=<V,E>. Zhang et al. teaches in col. 6, lines 35-42 using OSPF or IS-IS, which are known as link state routing where a link state database is built and maintain by each node. (OSPF is defined by RFC-1583 and IS-IS is defined by ISO/IEC 10589.)

Regarding claims 26 and 34, Zhang et al. teaches in col. 1, lines 63-64 assigning lightpath in real time based on connection requests.

Regarding claim 28, Zhang et al. teaches in col. 6, lines 35-42 update functions for maintaining link state database and network topology.

Regarding claim 29, Zhang et al. teaches in col. 6, lines 37-42 that the building and maintaining of the database can be done in a centralized manner or distributed manner.

Regarding claim 30, OSPF or IS-IS includes link management protocol for populated link state information.

Regarding claim 36, Zhang et al. teaches in col. 4, line 49-col. 5, line 15 determining whether a wavelength is available or not. This implies that the nodes keep track of whether a wavelength is unallocated (available) or allocated (unavailable).

Regarding claims 37-40 and 42, Zhang et al. teaches in col. 6, lines 43-54 computer usable medium.

Claim Rejections - 35 USC § 103

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claims 6-7, 12-13, 20 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ho et al. (P. Ho et al., "A Novel Distributed Control Protocol in Dynamic Wavelength-Routed Optical Networks", IEEE Communications Magazine, November 2002) in view of Golmie et al. (N. Golmie et al., "A Differentiated Optical Services Model for WDM Networks", IEEE Communications Magazine, February 2000).

Ho et al. has been discussed above in regard to claims 1-5, 8, 10-11, 14, 16-19, 21-22, 24-25, 26, 28 and 30. The difference between Ho et al. and the claimed invention is that Ho et al. does not teach dividing optical network into QoS levels. Golmie et al. teaches in FIG. 3 and Table 1 to divide optical links into channels according to a plurality of service levels. One of ordinary skill in the art would have been motivated to combine the teaching of Golmie et al. with the WDM network of Ho et al. because different service levels fulfill different customer needs. For example, certain customers are willing to pay premier charge for high quality service. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to divide the network into a plurality of service levels, as taught by Golmie et al., in the WDM network of Ho et al. because different service levels fulfill different customer needs.

12. Claims 6-7 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blouin et al. (U.S. Patent 7,249,169 B2) in view of Golmie et al. (N. Golmie et al., "A

Differentiated Optical Services Model for WDM Networks", IEEE Communications Magazine,

February 2000).

Blouin et al. has been discussed above in regard to claims 1-5, 9-11 and 15. The

difference between Blouin et al. and the claimed invention is that Blouin et al. does not teach

dividing optical network into QoS levels. Golmie et al. teaches in FIG. 3 and Table 1 to divide

optical links into channels according to a plurality of service levels. One of ordinary skill in the

art would have been motivated to combine the teaching of Golmie et al. with the WDM network

of Blouin et al. because different service levels fulfill different customer needs. For example,

certain customers are willing to pay premier charge for high quality service. Thus it would have

been obvious to one of ordinary skill in the art at the time the invention was made to divide the

network into a plurality of service levels, as taught by Golmie et al., in the WDM network of

Blouin et al. because different service levels fulfill different customer needs.

13.   Claims 9, 15, 23 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ho et al. (P. Ho et al., "A Novel Distributed Control Protocol in Dynamic Wavelength-Routed

Optical Networks", IEEE Communications Magazine, November 2002) in view of Pulkkinen et

al. (U.S. Patent Application Pub. 2003/0172356 A1).

Ho et al. has been discussed above in regard to claims 1-5, 8, 10-11, 14, 16-19, 21-22, 24-

25, 26, 28 and 30. The difference between Ho et al. and the claimed invention is that Ho et al.

does not teach a centralized management system. However, centralized management of

distributed database is well known in the art. For example, Pulkkinen et al. teaches centralized

management of a distributed database (see paragraph [0012]. One of ordinary skill in the art

would have been motivated to combine the teaching of Pulkkinen et al. with the WDM network

of Ho et al. because centralized management coordinates the local databases to ensure their

consistency and provides powerful computation power that is shared among local databases.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was

made to use a centralized management system for maintaining local database of each node, as

taught by Pulkkinen et al., in the WDM network of Ho et al. because centralized management

coordinates the local databases to ensure their consistency and provides powerful computation

power that is shared among local databases.

14.   Claims 16-19 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Blouin et al. (U.S. Patent 7,249,169 B2) in view of Graves et al. (U.S. Patent 6,741,572 B1).

Blouin et al. has been discussed above in regard to claims 1-5, 9-11 and 15. Blouin et al.

teaches in col. 7, lines 1-5 wavelength division multiplexing. Inherently, a wavelength must be

assigned to a path for carrying optical signal for a particular channel. Nevertheless, Examiner

cites Graves et al. for providing further evidence that assigning wavelength to links in a WDM

network is well known in the art. Graves et al. teaches in FIG. 6A and FIG. 6B assigning

available wavelength to links to form a lightpath. One of ordinary skill in the art would have

been motivated to combine the teaching of Graves et al. with the WDM network of Blouin et al.

because in a WDM network, wavelength must be chosen such that different channels would use

different wavelengths. Thus it would have been obvious to one of ordinary skill in the art at the

time the invention was made to select a single wavelength an assign to a route to form a

lightpath, as taught by Graves et al., in the WDM network of Blouin et al. because in a WDM

network, wavelength must be chosen such that different channels would use different

wavelengths.

15.   Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blouin et al. and

Graves et al. as applied to claims 16-19 and 21-24 above, and further in view of Golmie et al. (N.

Golmie et al., "A Differentiated Optical Services Model for WDM Networks", IEEE

Communications Magazine, February 2000).

Blouin et al. and Graves et al. have been discussed above in regard to claims 1-5, 9-11

and 15. The difference between Blouin et al. and Graves et al. and the claimed invention is that

Blouin et al. and Graves et al. do not teach dividing optical network into QoS levels. Golmie et

al. teaches in FIG. 3 and Table 1 to divide optical links into channels according to a plurality of

service levels. One of ordinary skill in the art would have been motivated to combine the

teaching of Golmie et al. with the modified WDM network of Blouin et al. and Graves et al.

because different service levels fulfill different customer needs. For example, certain customers

are willing to pay premier charge for high quality service. Thus it would have been obvious to

one of ordinary skill in the art at the time the invention was made to divide the network into a

plurality of service levels, as taught by Golmie et al., in the modified WDM network of Blouin et

al. and Graves et al. because different service levels fulfill different customer needs.

16.   Claims 27, 35 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Zhang et al. (U.S. Patent 7,020,394 B2) in view of Golmie et al. (N. Golmie et al., "A

Differentiated Optical Services Model for WDM Networks", IEEE Communications Magazine,

February 2000).

Zhang et al. has been discussed above in regard to claims 25-26, 28-34, 36-40 and 42.

The difference between Zhang et al. and the claimed invention is that Zhang et al. does not teach

dividing optical network into QoS levels. Golmie et al. teaches in FIG. 3 and Table 1 to divide

optical links into channels according to a plurality of service levels. One of ordinary skill in the art would have been motivated to combine the teaching of Golmie et al. with the WDM network of Zhang et al. because different service levels fulfill different customer needs. For example, certain customers are willing to pay premier charge for high quality service. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to divide the network into a plurality of service levels, as taught by Golmie et al., in the WDM network of Zhang et al. because different service levels fulfill different customer needs.

17.   Claims 31-34 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ho et al. (P. Ho et al., "A Novel Distributed Control Protocol in Dynamic Wavelength-Routed Optical Networks", IEEE Communications Magazine, November 2002) in view of Sichani et al. (A. Sichani et al., "A Novel Distributed Progressive Reservation Protocol for WDM All-Optical Networks", IEEE International Conferences on Communication, ICC '03, 11-14 May 2003).

Ho et al. has been discussed above in regard to claims 1-5, 8, 10-11, 14, 16-19, 21-22, 24-25, 26, 28 and 30. Regarding claim 31, the difference between Ho et al. and the claimed invention is that it may not be clear from Ho et al. how the source node communicates with other access nodes on the selected path to setup the path. Sichani et al. teaches in FIG. 1 backward reservation protocol. One of ordinary skill in the art would have been motivated to combine the teaching of Sichani et al. with the WDM network of Ho et al. because the backward reservation protocol reduces unused bandwidth. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a backward reservation protocol for setup the lightpath, as taught by Sichani et al., in the WDM network of Ho et al. because the backward reservation protocol reduces unused bandwidth.

Regarding claims 32-33, Ho et al. teaches on page 38, right col., last paragraph lightpath. Regarding claim 34, Ho et al. teaches dynamic path selection.

Regarding claim 36, Ho et al. teaches in FIG. 3 that the database includes the status of each wavelength.

18.   Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ho et al. and Sichani et al. as applied to claims 31-34 and 36 above, and further in view of Golmie et al. (N. Golmie et al., "A Differentiated Optical Services Model for WDM Networks", IEEE Communications Magazine, February 2000).

Ho et al. and Sichani et al. have been discussed above in regard to claims 31-34 and 36. The difference between Ho et al. and Sichani et al. and the claimed invention is that Ho et al. and Sichani et al. do not teach dividing optical network into QoS levels. Golmie et al. teaches in FIG. 3 and Table 1 to divide optical links into channels according to a plurality of service levels. One of ordinary skill in the art would have been motivated to combine the teaching of Golmie et al. with the WDM network of Ho et al. and Sichani et al. because different service levels fulfill different customer needs. For example, certain customers are willing to pay premier charge for high quality service. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to divide the network into a plurality of service levels, as taught by Golmie et al., in the WDM network of Ho et al. and Sichani et al. because different service levels fulfill different customer needs.

19.   Claims 37-40 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ho et al. and Sichani et al. as applied to claims 31-34 and 36 above, and further in view of Freeman

("Telecommunication System Engineering" by R. Freeman, John Wiley & Sons, 1980, pp 99-103).

Ho et al. and Sichani et al. have been discussed above in regard to claims 31-34 and 36. The difference between Ho et al. and Sichani et al. and the claimed invention is that Ho et al. and Sichani et al. do not teach a machine-readable medium. Freeman teaches in Section 12 stored-program control (SPC). Freeman teaches in p. 100 to store method steps as program in memory for providing instructions to a controller or computer. One of ordinary skill in the art would have been motivated to combine the teaching of Freeman with the modified WDM network of Ho et al. and Sichani et al. because SPC is flexible and expandable such that it is easy to upgrade the system by rewriting the program. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use SPC and store program in machine-readable medium, as taught by Freeman, in the modified WDM network of Ho et al. and Sichani et al. because SPC is flexible and expandable such that it is easy to upgrade the system by rewriting the program.

20.   Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ho et al., Sichani et al. and Freeman as applied to claims 37-40 and 42 above, and further in view of Golmie et al. (N. Golmie et al., "A Differentiated Optical Services Model for WDM Networks", IEEE Communications Magazine, February 2000).

Ho et al., Sichani et al. and Freeman have been discussed above in regard to claims 31-34 and 36. The difference between Ho et al., Sichani et al. and Freeman and the claimed invention is that Ho et al., Sichani et al. and Freeman do not teach dividing optical network into QoS levels. Golmie et al. teaches in FIG. 3 and Table 1 to divide optical links into channels according to a

plurality of service levels. One of ordinary skill in the art would have been motivated to combine

the teaching of Golmie et al. with the WDM network of Ho et al., Sichani et al. and Freeman

because different service levels fulfill different customer needs. For example, certain customers

are willing to pay premier charge for high quality service. Thus it would have been obvious to

one of ordinary skill in the art at the time the invention was made to divide the network into a

plurality of service levels, as taught by Golmie et al., in the WDM network of Ho et al., Sichani

et al. and Freeman because different service levels fulfill different customer needs.

Response to Arguments

21.   Applicant's arguments filed 12 July 2007 have been fully considered but they are not

persuasive.

The Applicant's arguments are moot in view of the new subject matter. They are also

moot in view of the additional rejections.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Shi K. Li whose telephone number is 571 272-3031. The

examiner can normally be reached on Monday-Friday (7:30 a.m. - 4:30 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jason Chan can be reached on 571 272-3022. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

skl
23 September 2007

Shi K. Li
Patent Examiner